

C L A I M S

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8/5/92
~~What is claimed and desired to be secured by Letters Patent~~
~~is as follows:~~

- Sub C 17*
1. A portable computer unit comprising:
 - (a) a portable computer housing;
 - (b) computer means positioned in said housing;
 - (c) flat panel display means interfaced to said computer means;
 - (d) a transparent membrane switch array interfaced to said computer means and overlayed on said display means; and
 - (e) closure panel means having said display means and said array mounted thereon on one side and connected to said housing in such a manner as to enable said closure panel means to be positioned in overlying relation to said housing with said display means facing away from said housing for use of said switch array and alternatively to be positioned in overlying relation to said housing with said display means facing toward said housing to close said unit.

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A unit as set forth in Claim 1 and including:

- (a) separable hinge means removably and hingedly connecting said closure panel means to said computer housing, said hinge means enabling removal and reversing of said closure panel means relative to said housing.

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A unit as set forth in Claim ~~2~~⁵ wherein said hinge means includes:

- (a) a plurality of cooperating detent means positioned on said housing and said closure panel means, said detent means being aligned along hinge axes of said housing and said closure panel means, and said detent means enabling said closure panel means to pivot relative to said housing and to be separated therefrom.

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A unit as set forth in Claim ~~2~~⁵ wherein said hinge means includes:

- (a) a plurality of cooperating spring detent means positioned on said housing and said closure panel means, said detent means being aligned along hinge axes of said housing and said closure panel means, and said detent means enabling said closure panel means to pivot relative to said housing and to be separated therefrom.

9. A unit as set forth in Claim 1 wherein said housing has an upper side and a lower side, and including:

pl (a) compound hinge means connecting said closure panel means to said housing, said hinge means enabling relative pivoting of said closure panel means and said housing from a first position wherein said closure panel means overlies said upper side with said display means facing said upper side to a second position wherein said closure panel means overlies said lower side with said display means facing away from said lower side.

- Autoc 27 6. A unit as set forth in Claim 1 and including:

(a) flexible cable means electrically connecting said display means and said array to said computer means.

- P 7. A unit as set forth in Claim 1 and including:

(a) separable electrical connector means electrically coupling said display means and said array to said computer means, said connector means being reversible to enable reversing said closure panel means relative to said housing.

- K 8. A unit as set forth in Claim 7 wherein:

(a) said electrical connector means includes a component which is hingedly connected to one of said housing and said closure panel means.

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9. A unit as set forth in Claim 7 wherein said electrical connector means includes:

- (a) a card edge connector extending from one of said closure panel means and said housing; and
- (b) a card edge connector socket pivotally mounted on the other of said closure panel means and said housing to enable pivoting about a hinge axis of said other of said closure panel means and said housing.

10. A unit as set forth in Claim 1 and including:

- p/ (a) a conventional keyboard mounted on said housing.

11. A unit as set forth in Claim 1 wherein:

- p/ (a) said housing is a notebook computer type housing.

Claim
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Sub C3 12. A portable computer unit comprising:

- (a) a portable computer housing;
- (b) computer means positioned in said housing;
- (c) a keyboard mounted on said housing and interfaced to said computer means;
- (d) a computer unit closure panel hingedly connected to said housing and pivotal relative thereto;
- (e) flat panel display means interfaced to said computer means and mounted on a first side of said closure panel;
- (f) a transparent membrane switch array interfaced to said computer means and overlaid on said display means on said first side of said closure panel;
and
- (g) hinge means hingedly connecting said closure panel to said housing and electrical connector means interfacing said display means and said array to said computer means, said hinge means and connector means cooperating in such a manner as to enable said closure panel to be positioned with said display means generally facing said keyboard to facilitate use of said unit by operation of said keyboard and viewing said display means and alternatively to enable positioning said closure panel in overlying relation to said housing with said display means and said array facing away from said housing to facilitate use of said unit by operation of said array and viewing said display means.

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(a) said hinge means is separable and reversible to enable removal of said closure panel from said housing.

14. A unit as set forth in Claim 13 wherein said hinge means includes:

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(a) a plurality of cooperating spring detent means positioned on said housing and said closure panel, said detent means being aligned along hinge axes of said housing and said closure panel, and said detent means enabling said closure panel to pivot relative to said housing and to be separated therefrom.

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Sub C4
15. A unit as set forth in Claim ¹² ~~13~~ wherein said housing has an upper side and a lower side, and including:

- (a) compound hinge means connecting said closure panel to said housing, said hinge means enabling relative pivoting of said closure panel and said housing from a first position wherein said closure panel overlies said upper side with said display means facing said upper side to a second position wherein said closure panel overlies said lower side with said display means facing away from said lower side.
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16. A unit as set forth in Claim 15 and including:

- (a) flexible cable means electrically connecting said display means and said array to said computer means.

17. A unit as set forth in Claim 12 and including:

- (a) separable electrical connector means electrically coupling said display means and said array to said computer means, said connector means being reversible to enable *reversed connection of* ~~reversing~~ said closure panel relative to said housing; and
- (b) said electrical connector means including a component which is hingedly connected to one of said housing and said closure panel.

18. A unit as set forth in Claim 12 and including:

- (a) a card edge connector extending from one of said closure panel and said housing, said connector including a plurality of pairs of conductive traces on respective opposite sides of said connector which are connected to said display means and said array, the sequence of traces on one side of said connector being reversed on the opposite side thereof whereby said connector is reversible;
- (b) a card edge connector socket pivotally mounted on said housing to enable pivoting about a hinge axis of said housing, said socket including a plurality of pairs of socket contacts on respective opposite sides of said socket, the sequence of contacts on one side of said socket being reversed on the opposite side thereof to enable said socket to reversibly receive said connector; and
- (c) flexible cable means electrically connecting said socket contacts to said computer means.

a 19. A unit as set forth in Claim ¹²~~13~~, wherein said hinge means includes:

- (a) a plurality of cooperating spring detent means positioned on said housing and said closure panel, said detent means being aligned along hinge axes of said housing and said closure panel, and said detent means enabling said closure panel to pivot relative to said housing and to be separated therefrom;
- (b) a card edge connector extending from one of said closure panel and said housing, said connector including a plurality of ¹pairs of conductive traces on respective opposite sides of said connector which are connected to said display means and said array, the sequence of traces on one side of said connector being reversed on the opposite side thereof whereby said connector is reversible;
- (c) a card edge connector socket pivotally mounted on said housing to enable pivoting about a hinge axis of said housing, said socket including a plurality of pairs of socket contacts on respective opposite sides of said socket, the sequence of contacts on one side of said socket being reversed on the opposite side thereof to enable said socket to reversibly receive said connector; and
- (d) flexible cable means electrically connecting said socket contacts to said computer means.

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- (a) a portable computer housing;
- (b) computer means positioned in said housing;
- (c) a plurality of key switches interfaced to said computer means and mounted on said housing;
- (d) flat panel display means interfaced to said computer means;
- (e) a transparent membrane switch array interfaced to said computer means and overlayed on said display means; and
- (f) closure panel means having said display means and said array mounted thereon on an outer side and connected to said housing in such a manner as to position said closure panel means in covering relation to said key switches and to enable pivoting said closure panel means away from said housing to provide access to said key switches.